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EXAMINER	
PADGETT, MARIANNE L	
ART UNIT	PAPER NUMBER
1792	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/581,163	VELTRI ET AL.	
	Examiner	Art Unit	
	MARIANNE L. PADGETT	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/29/2009, 10/15/2009, 5/31/2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/31/6*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. Applicants' third preliminary amendment of the **specification** of **12/29/2009** is adequate & **entered** in the file, however note that it is also technically noncompliant, since on page 4 it is impossible to delete a "." that is not there, as the period was not present on original page 4 after "inks" & neither of the preceding preliminary amendments were entered, but the end result of the current preliminary amendment appears to be an appropriate clarification, thus is entered.

Also for future reference, note that as the abstract & claims were properly corrected in the 10/15/2009 submission, applicants should not have resubmitted at the same amendments, which were previously entered.

2. **Claims 1-8, especially 4-5 & 7-8** are rejected under 35 U.S.C. **112, second** paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In **claims 1 & 4**, the requirement or option of "previously painted" is of unclear scope in that it is uncertain that if the metal substrate surface has been "previously painted", it is intended to be required to still be painted, since something can have been previously painted, and have had that paint removed, but it still would have been painted in the past, i.e. it is unclear whether the substrate is intended to optionally (claim 1) or positively (claim 4) be painted on the metal surface during the claimed electric discharge technique. Note that for independent claim 1, it really does not make any necessary difference in scope, since the scope of the claim is inclusive of all possible options with respect to the paint.

In **claim 5**, it is uncertain whether the claim means of "lithography, ink painting" are intended to be a choice of two different techniques, -- lithography or ink painting --, or if applicants are claiming painting via a lithographic technique, where the applied liquid is ink, since there is no language necessitating alternatives. However, the examiner has never heard lithography referred to as a painting technique (i.e. generally when one is painting with ink, one is using a brush or roller, or the like, and this is not a lithographic technique), although one can paint using stencils which has some relationship to

lithography; or is this some sort of translational misunderstanding? It is further noted that as applicants appear to be referring to paint & ink as equivalent coating materials, applicants intended scope may either be considered less than clear, or essentially generic to virtually any liquid coating composition, especially considering that it is perfectly possible for a paint to be transparent, although when paint or ink is referred to in common dialogue, one generally assumes the presence of some sort of pigment or die, however the terms do not actually necessitate their presence.

In **claim 7**, the scope of the construction of the conductive rod is uncertain, because it is unclear whether the claimed insulating ceramic material layer is only on the aluminum option for the conductive rod, or if it is also required on the stainless steel conductor rod option. Also, if insulating material is thermally or electrically insulating is not clear as claimed. For the claim as written, either interpretation will be considered with respect to the prior art. Furthermore, it is improper for a device claim to be dependent from a method claim, especially as it is unclear how actions in the method are intended to limit the device structure. Note that method limitations do not provide necessary limitations to an apparatus claim, except that the apparatus must be capable of producing or performing as recited in the method limitations, but how those capabilities should be interpreted with respect to the means for treating substrate is less than clear.

Product **claim 8** is completely unclear as to what it is claiming, as "A metal substrate, for the packaging of foodstuffs, whether previously painted **or not treated, according to the method Claim 1** wherein the electrode comprises a conductive rod made of..." (emphasis added), besides having the problem as discussed above with respect claim 7, & the lack of clarity with respect to "previously painted", this claim also appears to be saying that the product is not treated by the method of claim 1, thus it is unclear what product is being claimed. If one ignores the "not treated" option or considers that applicants might've meant not painted, it remains unclear what the structure of the electrode has to do with the metal substrate, unless applicant is actually trying to claim the conductive rod as the metal

substrate, but it is unclear how that would be used as foodstuff packaging. Alternatively, just considering the process steps required by independent claim 1, there is no clear or necessary structure produced on the generic metal substrate, which may or may not have painting on its surface, and if painted, that paint has no specified composition, thickness or distribution, physical attributes, etc., such that the claimed electrical discharge can have no specific or determinable affect on the metal surface or on the paint surface, especially considering that the process requires no particular effect, is performed for unspecified length of time, with unspecified substrate-electrode separation, unspecified atmospheric conditions, and where it is not indicated whether the 17-49 kilovolts at a frequency of 22-24 kHz is indicating a pulsed DC voltage or an AC frequency. Therefore, for purposes of examination of product claim 8 as written, it would appear that claim 8 may be considered to read on any metal substrate that might be capable of being used for food packaging, since the process cannot be considered to produce any particular surface structure, surface property, surface effect or microstructure, or shape of substrate, or any definite feature besides having at least some metal. For example, due to the lack of any clear or determinable structure, every metal can or every metal lid ever used in a canning process for preserving food or every nontoxic metallized wrapping material, might be considered to read on this claim of uncertain scope.

3. The following is a quotation of the appropriate paragraphs of **35 U.S.C. 102** that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of **35 U.S.C. 103(a)** which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. **Claims 1, 6 & 8** are rejected under 35 U.S.C. **102(b)** as being clearly anticipated by **Sörensen** (4,051,044).

Sörensen (abstract; figure 1; col. 1, lines 5-14 & 30-45+; col. 2, lines 10-23 & 62-64; col. 3, esp. lines 5-7, 15-20, 23-25 & 31-36; claims, esp. 1 & 5) teaches an electrical discharge technique that employs a cylindrical electrode coated with a dielectric material, that may be employed to treat via sparks & ions various objects by causing electrical discharge in the gap between the cylindrical electrode & the object. The parameters to be employed for causing the spark discharge are specifically taught to employ frequencies above 10 kHz & voltages above 5 kHz, which ranges encompass the claimed parameters of 17-49 KV & 22-24 kHz. The process is taught to be effective for conductive or nonconductive materials, with specific mention of metal & specific emphasis on treating hollow bodies, such as bottles or pipes, where such taught objects are considered capable of being employed for packaging food stuff, especially considering that liquid or flowable food materials (e.g. soups, stews, beverages, etc.) are conventionally stored in such containers.

Note that the particular claimed electrode materials & configuration in product claim 8, are irrelevant to the claimed product, since the electrodes require the formation of no necessary structure, property or effect on the claimed metal substrate that has no composition or no structure that is determinable, where only an intended enduse is claimed, which also provides no necessary structure,

material or even necessary use as intended. It is further noted that as Sörensen's powered electrode is cylindrical, it may be considered equivalent of a rod, and as it has a dielectric coating, it thus has an electrically insulating layer (may or may not be ceramic), thus reasonably expected to perform in an equivalent manner.

5. **Claim 8** is rejected under 35 U.S.C. **102(b)** as being clearly anticipated by **Bauer et al.** (3,451,871).

Claims 1-7 are rejected under 35 U.S.C. **103(a)** as being unpatentable over **Bauer et al.** (3,451,871), optionally further considering **Conrad** (5,147,614) for claim 7.

Bauer et al. (figures; abstract; col. 2, lines 1-44; col. 3, lines 13-30 & 47-col. 4, line 29 & 51-65; col. 5, lines 4-23; col. 6, lines 1-14 & 44-70; col. 7, esp. lines 1-17; col. 8, lines 16-36 & 45-67, esp. 49-56; col. 9, lines 22-31; examples esp. example 8, col. 12, lines 14-30) teach pretreatment techniques for exposed metal surfaces or nonmetallic surfaces that are part of a composite structure that includes a metallic layer (col. 9, lines 22-31), with various examples of such composite structures, inclusive of an aluminum foil substrate which first has a shellac primer coated thereon before application of the AC discharge treatment that is employed before a subsequent coating operation, such as extrusion of polyethylene (figure 1, esp. ref. #2-lacquer application & ref. #4 high-voltage treating arrangement; col. 6, lines 56-65 & Ex. 8). Bauer et al. teach their process overcomes difficulties with conventional corona discharge techniques, but provides similar desirable effects with respect to adhesion of subsequent depositions. Bauer et al. employ insulated metal guide rolls with opposed rolling or stationary treatment electrodes (steel core 26, with metal, e.g. aluminum foil 26 or 29 for even voltage distribution over electrode) that have an outer electrically insulating layer of heat resistant insulating material, exemplified as phenolic resin or Pyrex glass, respectively. It is taught that the alternating high-voltage field to be applied should generally have a voltage between 50,000-600,000 V (e.g. 50-600 kV), and a frequency between 25-400 kHz, with 25-75 kHz preferred, with it mentioned that taught conditions avoided a

corona effect (col. 2, lines 10-28). Further discussion mentions voltage dependence on dimensions involved, specifically that greater lengths of treating electrodes, or greater width of metal sheets are foils to be treated require relatively higher voltages (col. 6, lines 1-14), while the electrical conductivity of dielectric medium within the gap between the treating electrode & the metal surface being treated will affect the width of the gap employed.

With respect to applicants' product claim 8, which requires no identifiable structure except that the substrate is metal that may or may not have been painted & may or may not still have paint on the surface, where the type of paint is unlimited, the metal substrates treated by the process of Bauer et al. are considered to be encompassed by the claim scope, especially considering that the taught option of applying shellac may be considered to read on applicants' claimed paint, and that in col. 3, lines 28-30, the reference particular states that polyethylene coated aluminum foils as produced by their process are important as a packing material in the food industry, thus are directed to applicants' intended purpose. It is further noted that while the generally employed ranges taught by Bauer et al., start at 50,000 V (50KV) & 25 kHz values only very slightly higher than applicants' claimed maximum values of 49,000V (49KV) & 24 kHz, it would've been obvious to one of ordinary skill in the art that these differences would not have been expected to produce significantly different effects within the claim scope of the process, as the difference of 1 kV or 2 % difference & 24 versus 25 kHz, would still reasonably have been expected by one of ordinary skill in the art to have been able to produce taught metal pretreatment effects, while avoiding corona effects as desired, especially considering various teachings with respect to the effects of substrate & electrode dimensions, gap dimensions & dielectric materials present, such that optimization for such taught factors would have been reasonably expected to enable equivalent treatment at claimed values dependent on substrate size & apparatus configuration, etc.

With respect to the treatment electrodes structures as taught by Bauer et al., the electrodes as depicted in figure 4-5 & described on col. 8, lines 21-36 have a core made of steel covered with metal

foil, preferably aluminum, with an outermost insulating layer of phenolic resin, thus differs from applicants' claim as the steel rod is not necessarily stainless steel, & the layer of insulating material in this exemplary electrodes is polymeric not ceramic. However, on col. 8, lines 45-67 discussing figure 6, lines 49-56 specifically teach that this alternative treating electrode employs a Pyrex glass insulating out layer, also having an inner aluminum foil to assure even voltage distribution over the entire electrode, but doesn't mention the steel core, which appears to be implied by the discussion of distribution over the entire electrode, which implies that the foil is not the electrode itself. It would've been obvious to one of ordinary skill in the art to employ the implied, but not mention steel core in the stationary treating electrode, otherwise the aluminum foil would've been taught as having the voltage applied thereto and as being the electrode, not merely for distribution purposes. It would've been further obvious to one of ordinary skill in the art to employ durable steel alloys for the taught steel core, which conventionally would reasonably have been expected to conclude stainless steel. Furthermore while the heat resistant insulating material of figures 4 & 5 are exemplified as phenolic resin, the Pyrex glass (i.e. a ceramic) taught with respect to figure 6 is also a heat resistant material (very highly heat resistant), such that it would've been further obvious to one of ordinary skill that the higher heat resistant material would reasonably have been expected to be a useful alternative in the configurations of figures 4 & 5. It is also noted that one of ordinary skill in the art would reasonably have expected the apparatus of Bauer et al. to be effective for the slightly lower frequencies & slightly lower voltages intended to be employed in applicants claimed process, such that the apparatus would reasonably have been capable of such parameters. Alternatively, above asserted obviousness with respect to the steel being stainless & use of ceramics, such as the taught glass, are optionally further supported & suggested by **Conrad** (col. 3, line 6-20), who teaches a preference for using stainless steel or aluminum & dielectrics, such as glass or ceramics, to decrease the contamination & reduce maintenance requirements in analogous discharge electrode structures employed in oxidizing atmospheres.

With respect to the requirements of process claim 1, it would've been obvious to one of ordinary skill of the art that while the range of voltage & frequency parameters taught to be generally employed by Bauer et al. have minimum values slightly higher than applicants' claimed value ranges by a single digit within the claimed significant figures, that one of ordinary skill the art would reasonably have expected to employ such slightly lower values as presently claimed, dependent on dimensions of substrate, dimensions of electrodes, gap dimensions, specific dielectric materials, which as discussed above, are disclosed by Bauer et al. as affecting relevant parameters, such that the claim parameters are not seen to provide any patentably significant distinction from the process of Bauer et al., especially since the claimed process does not produce any particular effect, i.e. is significantly lacking in details that would require or context producing, any specific affect.

With respect to lithography &/or ink painting, while the exemplary initial primer coating that may be deposited on the substrate before the taught alternating field discharge treatment of Bauer et al. is exemplified by shellac & is not discussed as having been "painted" nor having any coloring (e.g. being an ink); painting & paint or ink are relatively generic terms, such that shellac may be considered encompassed as a type of paint & liquid application techniques inclusive of the roller application as illustrated in figure 1, ref #2 may reasonably be considered to encompass possible painting techniques. Furthermore, dependent on particular enduses & design requirements therefore, it would've been obvious to one of ordinary skill in the art to include dye components in the shellac to provide desired background colors where surface colors to a metal surface, such that the initially applied shellac, might reasonably be considered to also encompass an ink, in its more generic context.

6. It is noted that the British patent to **Eisby** (1,315,540) cited in the PCT search report also treats metal substrates (aluminum foil), discussing sparked treatment before subsequent coating processes, where the metal electrodes are covered by a insulating material (unspecified) with a dielectric constant about 7, where the claimed parameters employed were frequency less than = 20 kHz & voltage amplitude

less than equal to 10 kHz, in a gap of 0.5-2 mm (claim 1), thus provide teachings supportive of above obviousness arguments as electric discharge treatments are illustrated to be operative at lower values and those taught by Bauer et al.

7. **Other art** of interest includes **Bothe et al.** (5,096,630) directed to process of making multi-ply film structures, including a metallize layer that may be coated with a protected polyethylene film, which multi-ply structure is intended to be employed for purposes including packaging of foodstuffs, where the polymeric film to be metallized is corona treated, but it is not mentioned whether or not corona treatment is employed before deposition of the protective layer; **Lutzmann et al.** (4,096,013) who simultaneously apply a high-voltage corona discharge to sets of chemically to similar & noncompatible films which are subsequently bonded together, where those films may include metal foils, with a preferred and used as wrapping materials (abstract; figures 5-6; & col. 1, lines 15-29), however all the examples (col. 9+) are directed to various polymeric film sets, without any examples employing the earlier suggested metal foil, noting that for the polymeric examples 4.5-10 kilovolts were disclosed or specific example for various gaps of 60 Hz, 10 kilovolts, 6 inches/minutes & 64°C (col. 10, lines 45-53; col. 13, lines 25-39 & figure 4); **Ben-Malek et al.** (2002/0182319 A1) teach various options of dielectric barrier discharge, RF plasma & corona discharge for treating walls of metal containers, but their specific exemplary voltage & frequency parameters do not both fall within the claimed ranges for any of the techniques; & **Spence** (5,895,558) teach RF pulsed plasma discharge processes for treating substrates, where polls frequencies of 1-100 kHz between a pair of electrodes (claims 1 & 29), with pulse amplitude of $\geq$ 1 kv (claims 10 & 39), where electrode surfaces being maybe metal or dielectric faced (claims 12-13, etc.), however these parameters are not specifically taught as applied to metal surfaces or substrates.

8. **Any inquiry** concerning this communication or earlier communications from the examiner should be directed to **Marianne L. Padgett** whose telephone number is **(571) 272-1425**. The examiner can normally be reached on M-F from about 9:00 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks, can be reached at (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Marianne L. Padgett/
Primary Examiner, Art Unit 1792

MLP/dictation software

1/(20-22 & 25)/2010